

INFORMATION SHEET

ORDER NO. _____
VINTAGE PRODUCTION CALIFORNIA LLC
KERN FRONT OIL FIELD
KERN COUNTY

I. INTRODUCTION

Vintage Production California LLC (Vintage), a subsidiary of Occidental Petroleum Corporation (hereafter Discharger), owns and operates crude oil producing wells in the Kern Front Oil Field near Oildale, Kern County. Produced water from the oil field is either disposed via deep well injection, treated and routed via pipeline to Valley Waste Disposal Company's (VWDC's) Kern Front No. 2 treatment facility, and/or treated and discharged to a series of unlined ditches that ultimately converge and empty to an unlined channel that was constructed to convey the produced water to VWDC. Discharge to the unlined ditches is currently regulated by Waste Discharge Requirements (WDRs) Order No. 96-277 [National Pollutant Discharge Elimination System (NPDES) No. CA0083852] adopted by the Regional Water Board on 6 December 1996 and administratively extended by the Executive Officer on 19 November 2001. Order No. 96-277 limits total discharge flow to 4.0 mgd at four separate discharge points and includes effluent limitations for electrical conductivity (EC), chloride, boron, oil and grease, and pH. The Discharger submitted a 16 May 2001 Report of Waste Discharge (RWD) and application for permit renewal to continue discharge of produced water under the NPDES program. Information supplementing the RWD was provided by the Discharger on 29 May 2001, and amendments were submitted on 28 January 2003, 3 May 2004, and 19 March 2007.

The Kern Front Oil Field encompasses an area of about 8.6 square miles (5,495 acres) about three miles north of Oildale, Kern County. The oil field lies above the floor of the San Joaquin Valley in rolling foothills of the Sierra Nevada. Oil producing zones are reportedly within the lower portion of the Kern River formation and the upper portions of the Etchegoin and Chanac zones. The upper-most aquifer (unconfined) is within the Kern River formation approximately 500 feet below ground surface (bgs). The regional groundwater gradient is southwest. The base of groundwater is about 2,500 feet bgs within the Santa Margarita sandstone formation. The climate is dry with hot summers and mild winters. The primary land use in the area is oil production related. Discovered by Standard Oil Company in 1917, the field was developed by numerous oil companies, and in 1929 the field reached a maximum oil production level of 4.5 million barrels per year (bbls/year). Production subsequently diminished to its current level of 2.2 million bbls/year. Similar to other nearby oil fields such as the Kern River Oil Field and Mount Poso Oil Field, wells in the Kern Front Oil Field produce large quantities of water commingled with recovered oil. In 1952, the ratio of produced water to bbls oil produced was about 5:1¹. In 1973, the ratio was about 8.5:1², and in 1994, the water to oil ratio was about 13.4:1.

The Discharger operates a total of 34 oil field leases within Sections 2, 10, 11, 14, 22, 23, and 26, T28S, R27E, MDB&M. Oil and water produced from the 34 leases are collected in a network of underground pipelines. The separated oil is pumped via pipeline to oil storage facilities. Produced water from the oil field is either disposed via deep well injection, treated and routed via pipeline to VWDC, and/or treated and discharged to the unlined ditches and

¹ Division of Oil and Gas, *Summary of Operations, California Oil Fields*, Vol. 38, No. 2, 1952, p. 31

² Division of Oil and Gas, *California Summary of Operations*, Vol. 59, No. 2, 1973, p. 99

channel. The distance from the discharge points at the Fano, Robinson B, and Star Robinson leases to the channel are roughly 0.8, 0.4, and 0.2 miles, respectively. Portions of the channel are on federal land managed by the Bureau of Land Management. No sumps or open storage tanks are utilized in the treatment process. The majority of separated produced water is currently routed via pipeline to VWDC. Produced water conveyed to VWDC is further treated and ultimately routed to the Cawelo Water District (CWD) to supplement irrigation supplies. The Discharger historically discharged produced water to VWDC via the unlined ditches and channel. The ditches and channel are proximal to, and within, the natural drainage courses of the area and were previously considered a water of the U.S.. When discharge to the unlined ditches occurs, over half of the discharged produced water is lost through infiltration and evaporation. The Discharger has maintained WDRs No. 96-277 to discharge to the unlined ditches as a back-up disposal option at times when the pipeline to VWDC is not available. The Discharger had not regularly discharged to the ditches since July 2003, but recently resumed intermittent discharges to them. The Discharger, until very recently, maintained that discharge to the ditches would occur approximately 40 days per year, generally dictated by times of pipeline maintenance when discharge to VWDC is not available. The Discharger also disposes of a portion of its produced water using Class II injection wells regulated by the California Division of Oil, Gas, and Geothermal Resources. As reported and described by the Discharger, discharge to the ditches is a last resort behind the preferred alternatives of conveyance to VWDC and injection. Since circulation of the tentative Order, the Discharger now states that discharge to the ditches, at the requested flow rate, will be needed in addition to the other alternatives and specifically in addition to conveyance of produced water to VWDC near the newly authorized flow limit for VWDC of 7.4 million gallons per day (mgd).

Order No. 96-277 permits discharge at four locations originating from the Section 11 NTP, Robinson B, Star Robinson, and Fano leases. Since the time the existing Order was issued, the Discharger has consolidated the produced water from the Section 11 NTP site with the produced water from the Fano lease via pipeline. This has reduced the number of discharge points from four to three. Conveyance of treated produced water to VWDC via pipeline, or discharge to the ditches, now originate at the Fano, Robinson B, and Star Robinson leases.

Several oil producers reportedly built the ditches and the channel in the late 1940's to collect produced water for agricultural supply. The ditches generally follow the natural drainage topography. The channel begins in the southwest quarter of Section 22, T28S, R27E, MDB&M. The channel routes produced water to VWDC where produced water undergoes further treatment before it is conveyed to CWD Reservoir B. Produced water in Reservoir B is commingled with water from the Kern River and State Water Project, and groundwater, and used to irrigate about 35,000 acres of farmland within the CWD. Excess blended water in the CWD irrigation system may be periodically discharged to Poso Creek, a water of the United States. The discharge from VWDC to CWD and Poso Creek is regulated by WDRs Order No. R5-2006-0124 (NPDES Permit No. CA0081311).

Historically, this Regional Water Board has, at the direction of the U.S. Environmental Protection Agency (EPA), regulated discharges to all natural surface water channels as discharges to waters of the U.S. subject to regulation under the NPDES program. This regulatory application changed in 2001 when the U.S. Supreme Court issued a decision in

Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers. The decision stated that the federal Clean Water Act does not apply to isolated, intrastate, and non-navigable waters. The ditches and channel are proximal to, and within, the natural drainage courses of the area and the channel mingles with an unnamed intermittent stream (ephemeral drainage) on the north side of James Road near the Star Robinson lease. A small culvert diverts storm water which may collect in the drainage from the north side of James Road to the south side of James Road. U.S. Geological Survey (USGS) topographic maps dated 1954 indicate that water entering the drainage on the south side of James Road would flow southwest under Highway 65 for approximately one mile and empty into an irrigation reservoir/tail water pond. A Regional Water Board staff inspection of February 2007 indicates that the drainage terminates on the south side of James Road in a quarry (borrow pit). Also, the drainage segment south of James Road is now interrupted by agricultural fields and roadways. As the ditches, channel, and unnamed drainage are not hydraulically connected to any waters of the U.S., discharges thereto are not subject to regulation under the NPDES program. Therefore, NPDES Permit No. CA0083852 is being terminated with the rescission of WDR Order No. 96-277.

The Discharger uses steam injection to assist in crude oil extraction. Increases in the price of crude oil over the past several years have made it economically feasible for the Discharger to employ steam more extensively in its oil extraction operations. Use of steam tends to leach salts such as chlorides and boron out of the formations, thus increasing the EC of produced water. The Discharger's increased production and use of steaming may increase the EC, chlorides, and boron in its produced water.

The Water Quality Control Plan for the Tulare Lake Basin (Basin Plan) contains water quality objectives for surface and groundwaters in the Basin. The Basin Plan incorporates the Poso Creek policy (Resolution 71-122). The Basin Plan notes the entire basin is essentially closed, meaning salts discharged within the basin accumulate. It recognizes that salt in basin groundwater will increase over time and adopts a strategy of controlled degradation (as opposed to prevention). As a measure of the acceptable rate of degradation, the Basin Plan establishes (as a water quality objective) a maximum annual degradation rate no greater than six (6) umhos/cm per year for the Poso Groundwater Hydrographic Unit (Hydrologic Area Nos. 558.70, 558.80, and 558.90). The existing and proposed discharge occurs in the Kern Uplands Hydrologic area (558.90) of the Poso Groundwater Hydrographic Unit.

In 1982, the Regional Water Board adopted Resolution No. 82-136, amending the Basin Plan to allow discharges to exceed Basin Plan limits to facilitate use for irrigation and other beneficial uses where the exception would not cause exceedance of a water quality objective. The Basin Plan, therefore, provides some flexibility to allow agricultural use of oil field wastewater that exceeds established salinity limits provided the discharger first successfully demonstrates to the Regional Water Board that the proposed discharge will not substantially affect water quality nor cause a violation of a water quality objective.

II. BENEFICIAL USES

The unnamed intermittent streams in the discharge areas are considered Valley Floor Waters. For Valley Floor Waters in the Tulare Lake Basin, the applicable designated uses are agricultural supply (AGR), industrial service supply (IND), industrial process supply (PRO), water contact recreation (REC-1), non-contact water recreation (REC-2), warm freshwater habitat (WARM), wildlife habitat (WILD), rare, threatened, or endangered species (RARE), and ground water recharge (GWR).

As described in the previous Order, the area around the Vintage leases has been identified as habitat for the San Joaquin Kit Fox. The greatest population of the fox occurs at the southern end of the San Joaquin Valley and in the proximity of the Kern Front Oil Field.

The known beneficial uses of the unnamed intermittent streams are AGR (in the form of livestock watering), WARM, and WILD. The ditches and channel, which are proximal to and within the natural drainage course of the area and intermittent streams, are also considered to possess the AGR, WARM, and WILD beneficial uses. The beneficial uses of the underlying groundwater, as designated in the Basin Plan, are municipal and domestic supply (MUN), AGR, IND, and REC-1.

III. DESCRIPTION OF EFFLUENT

Discharge of treated produced water to the ditches previously occurred at four discharge points (DP1 through DP4) as authorized by Order No. 96-277. Order No. 96-277 specified the following effluent limitations for the four discharge points:

Effluent Limitations from Order No. 96-277

<u>Constituent</u>	<u>Units</u>	<u>DP1</u>	<u>DP2</u>	<u>DP3</u>	<u>DP4</u>
Flow	mgd	2.0	0.35	0.15	1.5
EC	umhos/cm	1,000	1,650	1,590	1,000
Chloride	mg/L	100	100	100	100
Boron	mg/L	2	1	1	1
Oil & Grease	mg/L	35	35	35	35
pH	standard	6.5 - 8.3	6.5 - 8.3	6.5 - 8.3	6.5 - 8.3

Since the time Order No. 96-277 was issued, the frequency and manner of produced water disposal practices have changed for the Discharger. In December 2001, produced water normally discharged from the Robinson B (DP2) and Star Robinson (DP3) leases were combined and rerouted to a deep injection well for disposal. In January 2002, produced water from the NTP (DP1) and Fano (DP4) leases were also routed for deep well injection. In July 2003, the Discharger completed construction of a 12-inch pipeline to transport treated

produced water from the Kern Front leases to the VWDC facility. The pipeline was reported to provide the capability of transporting all produced water to VWDC that is not otherwise injected. As of August 2003, discharge to the ditches was nearly eliminated but the discharge points were maintained for future use, if needed. As of the fourth quarter 2003, discharge point NTP (DP1) was eliminated and produced water from this lease was routed to the Fano (DP4) lease discharge. The combined discharge point was identified by the Discharger as DP1 in subsequent monthly monitoring reports. Beginning in November 2004, the Fano (formerly DP4, now known as DP1) discharge location was again utilized for disposal of treated produced water. Discharges were reported to occur in November 2004 and April 2005, and regular discharge from DP1 was reported to occur from February 2006 through at least December 2006 (the latest monitoring report/data reviewed for the proposed Order).

The following table provides a summary of the quality of the effluent (average values for available data) from each of the four discharge points as reported by the Discharger. The information includes the available monitoring data collected by the Discharger between January 2001 and December 2006 and provided in monthly monitoring reports submitted to the Regional Water Board.

Summary of Effluent Monitoring Data

<u>Constituent</u>	<u>Units</u>	NTP	Rob. B	Star Rob.	Fano	NTP/Fano
		<u>DP1¹</u>	<u>DP2²</u>	<u>DP3³</u>	<u>DP4⁴</u>	<u>DP1/DP4⁵</u>
Flow	mgd	0.31	0.29	0.10	0.15	0.16
EC	umhos/cm	798	1,473	1,382	918	838
Chloride	mg/L	74	64	42	75	79
Boron	mg/L	1.04	0.61	0.42	0.64	0.97
Oil & Grease	mg/L	17.8	14.2	8.0	17.1	15.8
pH	standard	7.48	7.65	7.56	7.51	7.28

1 - Average of data collected from January 2001 to July 2003.

2 - Average of data collected from January 2001 to November 2001.

3 - Average of data collected from January 2001 to November 2001.

4 - Average of data collected from January 2001 to December 2001.

5 - Average of data collected from November 2004 to December 2006.

IV. SUMMARY OF CHANGES

The proposed Order includes changes from the project and requirements in existing Order No. 96-277. A summary of the key changes are presented in the following section.

1. Discharge Locations

Discharge point DP1, which originated on the Section 11 NTP lease, has been eliminated. Treated produced water from the NTP lease (if not routed for deep well injection or conveyed

to VWDC) is routed to, and consolidated with, the Fano lease (DP4) produced water discharge location. In preparation of the proposed Order, the Fano (combined DP4/DP1), Robinson B (DP2), and Star Robinson (DP3) discharge locations have been designated as Discharges 001, 002, and 003, respectively.

2. Discharge Specifications

Flow

For each discharge point DP1, DP2, DP3, and DP4, Order No. 96-277 authorizes maximum discharge flow rates of 2.0, 0.35, 0.15, and 1.5 mgd, respectively (total of 4.0 mgd). The Discharger requested the current combined discharge flow limit of 4.0 mgd be reduced to a total combined maximum flow rate of 2.75 mgd. As requested by the Discharger, the proposed Order specifies a combined daily maximum discharge flow of 2.75 mgd for Discharges 001, 002, and 003. Given the implementation strategy set forth herein, the 2.75 mgd flow rate is granted dependent upon comparable reductions of produced water conveyed by pipeline from Vintage to VWDC.

EC

Order No. 96-277 requires that the EC of treated produced water discharged to the ditches not exceed daily maximums of 1,000 umhos/cm at DP1 (now combined with DP4), 1,650 umhos/cm at DP2 (Discharge 002), 1,590 umhos/cm at DP3 (Discharge 003), and 1,000 umhos/cm at DP4 (Discharge 001). The effluent limitations for DP2 and DP3 exceed Basin Plan limits for discharge of oil field wastewater to sumps, stream channels, or surface waters in the Tulare Lake Basin. For the proposed Order, the Discharger has requested EC limits of 1,650 umhos/cm for each of the three discharge locations (001, 002, and 003). The Discharger was requested by the Regional Water Board to conduct a study to support the proposed EC discharge specifications. As discussed in more detail later, the Discharger's study does not show that the proposed discharge will not adversely affect water quality or cause a violation of water quality objectives.

This Order does not authorize the EC limits requested by the Discharger, but it provides an exception that should allow the discharge to continue. The Order continues, in essence, the flow-weighted average EC previously authorized for the discharge. The Order specifies a monthly average limit of 1,080 umhos/cm for the three combined discharge locations. The Order also allows and specifies an annual average EC limit of 1,030 umhos/cm which is consistent with the findings of the technical study completed by CWD (the basis for the exception from the Basin Plan, as further discussed in Section V.).

Chloride

Order No. 96-277 requires that the concentration of chloride in the discharge not exceed a daily maximum of 100 mg/L for each of the four discharge points. For the proposed Order, the Discharger requested chloride specifications of 175 mg/L for each of the three proposed discharge locations (001, 002, and 003). This Order increases the effluent limitation for chloride for the three combined discharge locations to a monthly average of 200 mg/L. The 200 mg/L limit for chloride is consistent with the Basin Plan policy for discharge of oil field wastewater to sumps, stream channels, or surface waters in the Tulare Lake Basin.

Boron

Order No. 96-277 requires that the concentration of boron in the discharge not exceed daily maximums of 2.0 mg/L at DP1 (now combined with DP4), and maximums of 1.0 mg/L for DP2 (Discharge 002), DP3 (Discharge 003), and DP4 (Discharge 001). Although the existing effluent limitation for DP1 exceeds the boron limit specified in the Basin Plan for discharge of oil field wastewater, discharge location DP1 has since been eliminated and is not a part of the proposed Order. For the proposed Order, the Discharger has requested raising the boron limits at Discharge 001, 002, and 003 to 2.0 mg/L. This Order does not authorize the increase of boron limits requested by the Discharger. The Order continues, in essence, the flow-weighted average boron previously authorized for the discharge. The Order applies a monthly average boron limit of 1.5 mg/L for the three combined discharge locations. The discharge specification for boron is continued because it is consistent with the boron effluent limit prescribed for VWDC, and the implementation basis of this Order is that both the discharge and the affected groundwater basin are essentially the same ones considered in the VWDC Order.

V. RATIONALE FOR ORDER PROVISIONS

The following provides a summary of the specifications and provisions developed in consideration of the proposed Order.

1. Rationale for Flow Prohibition

The Discharger requested limitations for EC and boron significantly greater than those set by the Basin Plan for oilfield produced water and greater than the existing limitation exceptions authorized by Order No. 96-277. The Discharger completed a study intended to demonstrate the requested exceptions would comply with the Basin Plan. The study made no such demonstration. Currently, there is no demonstration by Vintage that justifies its proposed exceptions, as well as the exceptions in Order No. 96-277, as being consistent with the Basin Plan. Thus, Basin Plan limitations should apply to the requested discharge. However, due to the proximity of the discharge to the CWD, the groundwater hydrogeology, and the initially described contingent nature of the discharge, an exception for the discharge was allowed based on the results of the CWD study for VWDC. The CWD study evaluated salinity impacts based on a flow rate of 7.4 mgd from VWDC. For the Vintage exceptions in the proposed Order to be defensible, any discharge by Vintage under the proposed Order must result in an equivalent reduction of produced water conveyed to VWDC to ensure no greater salinity contributions occur than supported by the CWD study for the VWDC discharge. VWDC reports that Vintage historically contributes approximately 85 percent of the total produced water processed and discharged at VWDC. Considering the newly adopted flow limit for VWDC of 7.4 mgd, and the EC and boron exceptions allowed based on the CWD study, the Order includes a prohibition limiting total discharge from Vintage (ditches and pipeline) to 6.3 mgd (85% of 7.4 mgd).

2. Summary of Discharge Specifications

When discharge of treated produced water occurs at the authorized discharge locations 001, 002, and/or 003, the discharge shall not exceed the following limits:

1. The combined daily maximum discharge flow of produced water to Discharge 001, 002, and 003 shall not exceed 2.75 mgd.
2. Produced water discharged at 001, 002, and 003 (individually or combinations thereof) shall not contain EC, chloride, boron, and oil and grease which exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Annual Average</u>
Electrical Conductivity	umhos/cm	--	1,080	1,030
Chloride	mg/L	--	200	--
Boron	mg/L	--	1.5	--
Oil and Grease	mg/L	35	--	--

3. Produced water discharged at 001, 002, and 003 shall not have a pH less than 6.5 or greater than 8.3.

3. Rationale for Discharge Specifications

Oil and Grease

The Discharger, and oilfield dischargers in general, have been required to and have met, through implementation of appropriate treatment technology, an effluent limit of 35 mg/L for decades. This demonstrates that the specification regarding the discharge to not exceed 35 mg/L for oil and grease is achievable, appropriate, and a reflection of Best Practicable Treatment or Control (BPTC) consistent with Resolution 68-16.

EC

Produced water from the Discharger that eventually enters CWD serves as a source of agricultural water supply. The Basin Plan limits EC in wastewaters from oil fields to 1,000 umhos/cm. The Basin Plan also stipulates that discharges of oil field wastewater that exceed this limit may be permitted if the discharger successfully demonstrates to the Regional Water Board that the discharge will not substantially affect water quality nor cause a violation of water quality objectives. For the proposed Order, the Discharger requested EC limits of 1,650 umhos/cm for each of the three discharge locations 001, 002, and 003.

In support of the requested EC limits, the Discharger submitted a 30 September 2003 *Basin Plan Demonstration Report for Oxy Kern Front Oil Field* (hereafter Demonstration), prepared by Houghton HydroGeo-Logic, Inc. (Houghton). Houghton utilized the SESOIL and AT123D computer models to examine the potential for the discharge to reach and impact the underlying groundwater. The intent of the study was to support salinity limits in excess of those explicitly

allowed by the Basin Plan. Groundwater underlying the area of the discharge ranges in depth from 553 to 863 feet bgs. For the study, Houghton conservatively estimated that the depth to first encountered groundwater is 550 feet bgs. Two scenarios were evaluated, both assuming a total annual discharge of 250 million gallons. The first scenario assumed a constant discharge rate of 0.68 mgd for 365 days per year, while the second scenario assumed a discharge rate of 6.25 mgd for 40 days per year. Houghton concludes that in 50 years (10 times the duration of this Order), the constituents introduced by discharge of produced water by the Discharger will not reach first encountered groundwater. Houghton also expects there will be greater infiltration when discharge occurs year round at a lower flow rate than when discharge occurs at a higher flow rate for only a portion of the year.

The evaluation was performed for an annualized discharge flow of 0.68 mgd. The Discharger has requested a total combined maximum flow rate of 2.75 mgd. Further, the Demonstration does not include a characterization of the underlying groundwater quality and does not quantify potential impacts that the discharge and other contributing salt sources will have on underlying groundwater relative to the water quality objectives. Also, the study conclusion relies upon salt buildup in the unsaturated zone. The State Water Board concluded some time ago that indirect pollution from geologically impeded flow of salt to groundwater is just as irreparable as from direct pollution. Thus, temporal storage of salt within the unsaturated zone is not an acceptable demonstration. Thus, the Discharger did not sufficiently demonstrate that the requested increase of salinity limits are consistent with Basin Plan policy and did not demonstrate that the proposed discharge will not adversely affect water quality or cause a violation of water quality objectives.

Existing Order No. 96-277 authorized individual flow and EC limitations for the four discharge locations as consistent with the Basin Plan. Considering the prescribed limits, the Order allowed (although not specifically) for a flow-weighted average EC discharge limit of 1,080 umhos/cm.

The Discharger reports that discharge of treated produced water at the three proposed locations will primarily occur if the pipeline to VWDC is not available. The majority of any produced water that enters the ditches is lost to infiltration and evaporation. Also, groundwater beneath the ditches flows into CWD. Produced water that reaches VWDC (via the ditches/channel and/or pipeline) will undergo further treatment by VWDC (as required by Order No. R5-2006-0124) and will eventually be routed to CWD Reservoir B. CWD recently completed a technical study and demonstrated that treated produced water from VWDC with an annual average EC of 1,030 umhos/cm, and management of other salt sources for the most part, warrants an exception to the maximum EC limit specified in the Basin Plan. As produced water from the Discharger (Vintage) is the primary source (about 85%) of the VWDC discharge, and the VWDC discharge may cease when the pipeline from Vintage is unavailable and Vintage discharges to the unlined ditches, it is reasonable that the annual average EC limit applied to VWDC also apply to Vintage when discharge to the ditches occurs. Application of the exception is appropriate provided the discharge by Vintage under the proposed Order results in an equivalent reduction of produced water conveyed to VWDC to ensure no greater salinity contributions occur than supported by the CWD study for the VWDC discharge. Thus, the proposed Order includes a flow prohibition as described previously.

Therefore, this Order does not authorize the EC limits requested by the Discharger. The Order continues, in effect, the flow-weighted average EC previously authorized for the discharge. The Order specifies a monthly average EC limit of 1,080 umhos/cm for the three combined discharge locations. Compared to the limits in the existing Order, the monthly average EC limit of 1,080 umhos/cm, coupled with the requested flow limit of 2.75 mgd, equates to about a 30 percent load reduction of EC for the proposed discharge. The Order also allows and specifies an annual average EC limit of 1,030 umhos/cm, which is consistent with the findings of the technical study completed by CWD that evaluated the overall aggregate salinity impact from these oilfield discharges and others.

Boron

The Order continues, in essence, the flow-weighted average boron previously authorized for the discharge. The Order applies a monthly average boron limit of 1.5 mg/L for the three combined discharge locations. The discharge specification for boron is authorized on the basis that the discharged wastewater is the same wastewater evaluated for the VWDC permit. It is also consistent with the effluent limit prescribed for VWDC.

Salinity

The intent of the Basin Plan for controlling salinity degradation of both surface and groundwater is to minimize discharge of salinity to the extent reasonable considering careful use and management of water resources. It is reasonable to expect that salinity may increase in the discharge with increased oil production and/or use of steam, and that it is reasonable to implement salinity limits authorized by the Basin Plan for oilfield discharges to facilitate recovery of oil. However, to the extent that salinity is controllable, it is reasonable and appropriate that it be done to meet the intent of the Basin Plan. It is appropriate that the Discharger complete a Salinity Evaluation and Minimization Plan to discover whether there are opportunities for salinity reductions.

4. Basis for Receiving Water Limitations

As the ditches and channel are proximal to and meander with the natural drainage (intermittent stream), it is reasonable and appropriate to apply receiving water limitations to protect the applicable beneficial uses of potential receiving waters. Receiving Water Limitations are based on the Basin Plan numerical and narrative water quality objectives.

5. Basis for Groundwater Limitations

Basin Plan water quality objectives for protection of beneficial uses of groundwater include numeric and narrative objectives, including objectives for chemical constituents, toxicity of groundwater, and taste and odor.

6. Basis for Self-Monitoring Requirements

The Monitoring and Reporting Program is issued pursuant to California Water Code Section 13267. The Discharger shall not implement any changes to this Program unless, and until, the

Regional Water Board or Executive Officer issues a revised Monitoring and Reporting Program. Sample collection, storage, and analyses shall be performed according to methods approved and specified by the Executive Officer of the Regional Water Board. All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each sample shall be recorded on the sample chain of custody form. All analyses shall be performed in accordance with the Standard Provisions, Provisions for Monitoring.

Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health Services (DHS) or a laboratory waived by the Executive Officer from obtaining a certification for these analyses by DHS. The director of the laboratory whose name appears on the certification or his or her laboratory supervisor who is directly responsible for analytical work performed shall supervise all analytical work, including appropriate quality assurance/quality control procedures in his or her laboratory, and shall sign all reports of such work submitted to the Regional Water Board.

VI. REOPENER

The conditions of discharge in this Order were developed based on currently available technical information, currently available water quality information, applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. Additional information must be developed and documented by the Discharger as required by schedules set forth in this Order. As this additional information is obtained, decisions will be made concerning the best means of assuring the highest water quality possible. It may be appropriate to reopen this Order if applicable laws and regulations change, or if new information necessitates the implementation of new or revised discharge specifications, to adequately protect water quality.

VII. ANTIDegradation

Basin Plan policies for disposal of oil field wastewater in unlined sumps overlying groundwater with existing and future probable beneficial uses specify 200 mg/L for chlorides and 1.0 mg/L for boron. The proposed Order limits the salinity mass loading to less than what was previously authorized and limits the salinity concentrations, on average, equal to what was previously authorized or found by demonstration to be consistent with the Basin Plan. Thus, no additional degradation is being authorized in the proposed Order than what was authorized by previous decisions and no antidegradation analysis is necessary. The discharge, as conditioned in the proposed Order, is consistent with the antidegradation provisions of State Water Board Resolution 68-16.

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VIII. CEQA

The action to adopt this Order is exempt from the provisions of CEQA (Public Resources Code Section 21100, et seq.), pursuant to Title 14 California Code of Regulations Section 15301, Class 1 exemption for existing facilities with no expansion of existing use.

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